

ABSTRACT OF THE DISCLOSURE

A system and method for generating a three-dimensional visualization image of an object such as an organ using volume visualization techniques and exploring the image using a guided navigation system which allows the operator to travel along a flight path and to adjust the view to a particular portion of the image of interest in order, for example, to identify polyps, cysts or other abnormal features in the visualized organ. An electronic biopsy can also be performed on an identified growth or mass in the visualized object. Virtual colonoscopy can be enhanced by electronically removing residual stool, fluid and non-colonic tissue from the image of the colon, by employing bowel preparation followed by image segmentation operations. Methods are also employed for virtually expanding regions of colon collapse using image segmentation results.